

In the Claims

Claims are presented as follows:

1. (currently amended) Apparatus for providing a point to point digital subscriber line communication service over a point to point subscriber line from a line termination equipment disposed at a central station to a subscriber terminal, wherein the line termination equipment and the subscriber terminal incorporate respective first and second management systems arranged to control and supervise said digital subscriber line communication service via messaging therebetween carried in an engineering operations channel over the line, and wherein the line termination equipment and the subscriber terminal incorporate means for providing said engineering operations channel in the form of a sequence of ATM Adaptation Layer (AAL) minicells over the line, said engineering operations channel comprising a separate channel independent of any transport channels.

2. (previously presented) A digital communications system comprising: a subscriber network termination, a line termination equipment, and a point to point transmission path therebetween, the subscriber termination and the line termination being coupled to the path via respective first and second modems, wherein the subscriber termination and the line termination each incorporate respectively a first and second management system each system consisting of a corresponding plurality of management levels, said first and second management systems being arranged to control and supervise a digital subscriber line communication service via messaging carried in an engineering operations channel over the line, wherein said subscriber termination and the line termination each incorporate respective multiplexer means interfacing with the management levels of that termination, and wherein said subscriber termination and line termination incorporate respective packet transaction means each interfacing with the respective multiplexer means for carrying messaging between corresponding subscriber termination and line termination

management levels in an engineering operations channel over the path, said engineering operations channel being comprised by a sequence of ATM Adaptation Layer (AAL) minicells over the path.

3. (cancelled).

4. (original) A digital communications system as claimed in claim 24, wherein said line termination equipment is coupled to an ATM backplane whereby the digital service is delivered.

5. (original) A digital communications system as claimed in claim 4, wherein said line comprises a twisted conductor pair.

6. (previously presented) A digital subscriber network termination for receiving a point to point digital subscriber line service over a point to point subscriber line coupled thereto, the subscriber termination including a management system consisting of a plurality of management levels, said management system being arranged to control and supervise said digital subscriber line communication service via messaging carried in an engineering operations channel over the line, multiplexer means interfacing with the management levels of the subscriber termination, and packet transaction means interfacing with the multiplexer means for carrying messaging to and from the management levels in an engineering operations channel over the line, said engineering operations channel being comprised by a sequence of ATM Adaptation Layer (AAL) minicells over the line.

7. (currently amended) A method of providing a digital subscriber line communication service over a digital subscriber link over a point to point line from a line termination equipment disposed at a central station to a subscriber terminal, the method comprising providing a engineering operations channel for effecting control and management of the subscriber terminal, and transporting said engineering

operations channel in a sequence of ATM Adaptation Layer (AAL) minicells over the line, said engineering operations channel comprising a separate channel independent of any transport channels.

8 to 11. (cancelled).

12. (currently amended) A method of transporting digital subscriber line traffic over a digital subscriber link over a point to point line from a central station to a subscriber terminal, the method comprising providing an engineering operations channel over the line, wherein said engineering operations channel is transported over said line in ATM Adaptation Layer (AAL) minicells, said engineering operations channel being provided as a separate channel independent of any transport channels.

13. (previously presented) A method of controlling a point to point digital subscriber line communications system comprising a subscriber network termination, a line termination equipment, and a point to point transmission path therebetween, the subscriber termination and the line termination each incorporating respectively a first and second management system each system consisting of a corresponding plurality of management levels, said first and second management systems being arranged to control and supervise said digital subscriber line communication service, the method comprising providing messaging paths between corresponding management levels, and multiplexing said messaging paths into an engineering operations channel over the line, wherein said engineering operations channel is transported in a sequence of ATM Adaptation Layer (AAL) minicells over the line.

14. (cancelled).

15. (previously presented) A method as claimed in claim 7, wherein packet voice traffic is carried in spare capacity in said engineering operations channel.

16. (previously presented) A method as claimed in claim 15, wherein the engineering operations channel is framed and byte oriented.

17. (previously presented) A method as claimed in claim 16, wherein the engineering operations channel is scrambled over the line.

18. (previously presented) A method as claimed in claim 17, wherein synchronisation between the central station and the subscriber terminal is performed during a period of transmission of null data on said engineering operations channel.

19. (previously presented) An apparatus as claimed in claim 1, wherein the AAL minicells are AAL2 minicells.

20. (previously presented) A digital communications system as claimed in claim 2, wherein the AAL minicells are AAL2 minicells.

21. (previously presented) A digital subscriber network termination as claimed in claim 6, wherein the AAL minicells are AAL2 minicells.

22. (previously presented) A method as claimed in claim 7, wherein the AAL minicells are AAL2 minicells.

23. (previously presented) A method as claimed in claim 12, wherein the AAL minicells are AAL2 minicells.

24. (previously presented) A digital communication system as claimed in claim 2, wherein said subscriber termination and line termination each incorporate scrambling and descrambling means.